Please add the following new claim 38:

38. (New) For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and at least one evaporation chamber and includes heat-transfer surfaces by which heat passes from the at least one condensation chamber to the at least one evaporation chamber;

B) means for irrigating each said evaporation chamber at an irrigation rate that has a respective average irrigation rate and so varies as repeatedly to reach a respective peak irrigation rate that is at least twice the average irrigation rate thereof; and

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

REMARKS

By the foregoing amendments, Applicant has revised claims 1-6, 11, 13, 15-18, 20, 22, 24, and 28 to eliminate the bases for the §112 rejections set forth in the Office action of April 10, 2002. He has also submitted new claim 38 to define his contribution to the art further.

Initially, Applicant would like to make of record a telephone interview that occurred on July 18, 2002, between Examiner Manoharan and Applicant's undersigned attorney. In the course of that interview, the foregoing amendments to claims 1 and 6 were discussed, and the Examiner indicated that those amendments would likely overcome the §112 rejections, although she made no commitment on that score.

An extensive discussion of the rejections under §103(a) ensued.

Specifically, the Examiner reiterated the position set forth in the Office action, namely, that there was no patentable distinction in Applicant's recitation that the evaporation-chamber irrigation system has a "rate of irrigation of each said evaporation chamber" that "has a respective average irrigation rate and repeatedly reaches a respective peak irrigation rate that is at least twice the average irrigation rate thereof. . . ." The rationale that the Examiner gave was that this limitation "is more directed to 'process' rather than to apparatus to which the claims are directed." The action further states that "a process limitation is not the basis for patentability of an apparatus claim."

But Applicant's attorney indicated that he knew of no authority for such a proposition. Indeed, the authority is just the opposite. For example, 35 U.S.C. §112 specifically approves means-plus-function elements and states their effect in defining an apparatus claim's scope. And, as the Court of Appeals for the Federal Circuit recognized in *Greenberg* v. *Ethicon Endo-Surgery, Inc.*, 91 F 3d 1580 (Fed. Cir. 1996), it is also commonplace and acceptable for non-means-plus-function elements of an apparatus claim to be defined in terms of what it they do rather than what it is they are. An "oscillator" is simply anything that oscillates. A 110-volt, 60-Hz voltage source is anything that produces a voltage that varies at a rate of 60Hz and has a root-mean-square value of 110 volts. All of these are appropriate apparatus-claim elements. No less so is a varying-rate irrigation system whose rate for each evaporation chamber so varies as to have a peak at least twice its average.

True, an apparatus claim that includes a functional limitation can be found to be anticipated by a reference that, although it does not describe the function claimed, does describe

an apparatus that inherently performs that function. But no such case is presented by the cited references, namely, British Patent Specification No. 757,085 and U.S. Patents Nos. 2,894,879 to Hickman, 4,198,360 to Shafranovsky et al., and 4,283,255 to Ramshaw et al.

Neither in the written action nor during the telephone interview did the Examiner state any basis for contending that the apparatus disclosed in any of those references inherently provides the function that the claims define. Indeed, she stated just the opposite, namely, that all of those references "[differ] from the claimed invention in that claim 1, for example, recites the limitation that the 'irrigation system whose rate of irrigation of each said evaporation system has respective average irrigation rate and repeatedly reaches a respective peak irrigation rate that is at least twice, the average irrigation rate thereof'." (*Sic.*)

Nor has Applicant found in any of those references a basis for contending that the rate of irrigation of any irrigation system there described repeatedly reaches, as the claims require, a peak irrigation rate that is at least twice its average irrigation rate. In the case of the British reference, for instance, the Examiner merely refers generally to the claims on pages 6-8, but the only references to irrigation in those claims are exemplified by the recitation at the top of the seventh page's left column, which says that "a feed pipe . . . continuously [supplies] distilland to said evaporating surface. . . ." Certainly, a "continuous flow" can (and, in Applicant's view, conventionally would) simply be a constant-rate flow; the variation that Applicant's claims define therefore is not inherent in the apparatus described in that reference.

Applicant's review of the other references reveals no such inherence in any of them, either.

Applicant therefore respectfully requests that the Examiner withdraw all rejections and allow the claims as amended. If the Examiner wishes to persist in the rejection under §103(a), however, Applicant respectfully requests that she state with more particularity her basis for contending that the irrigation rate produced by any apparatus described in the references inherently varies in the manner that Applicant's claims define.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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MARK-UP PAGES FOR THE AUGUST 9, 2002, AMENDMENT TO U.S. PATENT APPLICATION SER. NO. 09/765,263

The replacement for the first full paragraph of page 1 resulted from the following changes:

The present application is related to commonly assigned U.S. ~~p~~Patent ~~a~~Application~~s~~ Serial No. 09/764,707, which was filed on January 18, 2001, ~~of~~by William H. Zebuhr for a Cycled-Concentration Distiller, U.S. Patent Application Serial No. 09/765,260, which was filed on January 18, 2001, by William H. Zebuhr for a Distiller Employing Separate Condensate and Concentrate Heat-Exchange Paths, U.S. Patent Application Serial No. 09/765,261, which was filed on January 18, 2001, by William H. Zebuhr for a Rotary Evaporator Employing Self-Driven Recirculation, and U.S. Patent Application Serial No. 09/765,475, which was filed on January 18, 2001, by William H. Zebuhr for a Distiller Employing ~~Recirculation~~Recirculant-Flow Filter Flushing, ~~, all of which were filed on the same date as the present application and~~all of which are hereby incorporated by reference.

The replacement for claim 1 resulted from the following changes:

1. For distilling a liquid, an evaporator-and-condenser unit comprising:

A) a heat exchanger that forms at least one condensation chamber and at least one evaporation chamber and includes heat-transfer surfaces~~, forming at least one condensation chamber and at least one evaporation chamber,~~ by which heat passes from the at least one condensation chamber to the ~~heat exchanger~~at least one evaporation chamber;

B) a~~n~~ varying-rate evaporation-chamber irrigation system whose rate of irrigation of each said evaporation chamber has a respective average irrigation rate and so varies as repeatedly to reach~~es~~ a respective peak irrigation rate that is at least twice the average irrigation rate thereof; and

C) a vapor guide defining a vapor path along which it directs to the at least one condensation chamber vapor thereby produced in the at least one evaporation chamber.

The replacement for claim 2 resulted from the following changes:

2. An evaporator-and-condenser unit as defined in claim 1 wherein each said at least one evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

The replacement for claim 4 resulted from the following changes:

4. An evaporator-and-condenser unit as defined in claim 3 wherein each said at least one evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

The replacement for claim 5 resulted from the following changes:

5. An evaporator-and-condenser unit as defined in claim 1 wherein the irrigation system includes:

A) a main sprayer system that irrigates each said at least one evaporation chamber for at least the majority of the time; and

B) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said at least one evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof.

The replacement for claim 6 resulted from the following changes:

6. An evaporator-and-condenser unit as defined in claim 5 wherein:

A) the evaporator-and-condenser unit includes a plurality of said evaporation chambers;

B) the auxiliary sprayer system includes at least one auxiliary-system nozzle, associated with ~~a plurality~~at least some of said evaporation chambers, from which the auxiliary sprayer system produces an auxiliary-system spray; and

C) for each of the evaporation chambers with which the auxiliary-system nozzle is associated, the auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber.

The replacement for claim 11 resulted from the following changes:

11. An evaporator-and-condenser unit as defined in claim 1 wherein the heat exchanger is a rotary heat exchanger in which the heat-transfer surfaces are mounted for rotation about a central cavity from which the irrigation system irrigates the at least one evaporation chambers.

The replacement for claim 13 resulted from the following changes:

13. An evaporator-and-condenser unit as defined in claim 11 wherein the irrigation system includes:

A) a main sprayer system that irrigates each said at least one evaporation chamber for at least the majority of the time; and

B) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said at least one evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof.

The replacement for claim 15 resulted from the following changes:

15. An evaporator-and-condenser unit as defined in claim 13 wherein:

A) the evaporator-and-condenser unit includes a plurality of said evaporation chambers;

B) the auxiliary sprayer system includes at least one auxiliary-system nozzle, associated with ~~a plurality~~at least some of said evaporation chambers, from which the auxiliary sprayer system produces an auxiliary-system spray; and

C) for each of the evaporation chambers with which the auxiliary-system nozzle is associated, the auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber.

The replacement for claim 16 resulted from the following changes:

16. An evaporator-and-condenser unit as defined in claim 15 further including a compressor so interposed in the vapor path as to make the vapor pressure in the at least one condensation chamber exceed that in the ~~at least one~~ evaporation chambers.

The replacement for claim 17 resulted from the following changes:

17. An evaporator-and-condenser unit as defined in claim 1 wherein:

A) the peak irrigation rate for each said at least one evaporation chamber exceeds the steady-state rate required to keep the heat-transfer surfaces thereof wetted; and

B) the average irrigation rate for each said at least one evaporation chamber is no more than half the steady-state rate required to keep the heat-transfer surfaces of that evaporation chamber wetted.

The replacement for claim 18 resulted from the following changes:

18. An evaporator-and-condenser unit as defined in claim 17 wherein each said at least one evaporation chamber's irrigation rate reaches its peak irrigation rate periodically.

The replacement for claim 20 resulted from the following changes:

20. An evaporator-and-condenser unit as defined in claim 17 wherein the irrigation system includes:

A) a main sprayer system that irrigates each said at least one evaporation chamber for at least the majority of the time; and

B) an auxiliary sprayer system that irrigates each said at least one evaporation chamber for only a minority of the time, the rate at which each said at least one evaporation chamber is irrigated while the auxiliary sprayer system is irrigating it being at least twice the average irrigation rate thereof.

The replacement for claim 22 resulted from the following changes:

22. An evaporator-and-condenser unit as defined in claim 20 wherein:

A) the evaporator-and-condenser unit includes a plurality of said evaporation chambers;

B) the auxiliary sprayer system includes at least one auxiliary-system nozzle, associated with ~~a plurality~~at least some of said evaporation chambers, from which the auxiliary sprayer system produces an auxiliary-system spray; and

C) for each of the evaporation chambers with which the auxiliary-system nozzle is associated, the auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber.

The replacement for claim 24 resulted from the following changes:

24. An evaporator-and-condenser unit as defined in claim 17 wherein the heat exchanger is a rotary heat exchanger in which the heat-transfer surfaces are mounted for rotation about a central cavity from which the irrigation system irrigates the at least one evaporation chamber~~s~~.

The replacement for claim 28 resulted from the following changes:

28. An evaporator-and-condenser unit as defined in claim 26 wherein:

A) the evaporator-and-condenser unit includes a plurality of said evaporation chambers;

B) the auxiliary sprayer system includes at least one auxiliary-system nozzle, associated with ~~a plurality~~at least some of said evaporation chambers, from which the auxiliary sprayer system produces an auxiliary-system spray; and

C) for each of the evaporation chambers with which the auxiliary-system nozzle is associated, the auxiliary-system nozzle executes reciprocation between positions in which the auxiliary-system spray irrigates that evaporation chamber and positions in which the auxiliary-system spray does not irrigate that evaporation chamber.